AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Previously presented) The furnace carbon black producing process in accordance with claim 15, wherein in steps (c) - (e), the heated, dewatered off-gas from step (b) is the only combustible gas supplied to the burner portion and wherein the combustible gas feed stream and oxidant gas feed stream are controlled to provide deep rich fuel conditions in steps (d) and (e).

3. (Previously presented) The furnace carbon black producing process in accordance with claim 15, wherein the heated, dewatered off-gas is dewatered by means of pressure swing absorption.

4. (Previously presented) The furnace carbon black producing process in accordance with claim 15, wherein the off-gas is subjected to plasma heating subsequent to removal of carbon black therefrom and prior to being fed to the burner portion.

5. (Previously presented) The furnace carbon black producing process in accordance with claim 15, wherein the oxidant gas feed stream is subjected to plasma heating prior to being fed to the burner portion.

6. (Previously presented) The furnace carbon black producing process of claim 15, wherein hydrocarbon feedstock is subjected to plasma heating prior to being fed to the carbon black furnace.

7. (Previously presented) The furnace carbon black producing process of claim 15, wherein combustion gases produced in the burner portion by combustion of the heated, dewatered, off-gas with the oxidant gas feed stream are subjected to plasma heating prior to contacting hydrocarbon feedstock in the reactor portion of the carbon black furnace.

8. (Previously presented) The furnace carbon black producing process of claim 15, wherein the oxidant gas feed stream to the burner portion comprises air plus oxygen enhancement, wherein the oxygen enhancement is produced by a pressure swing adsorption process.

9. (Withdrawn) A furnace carbon black producing process wherein plasma heating is used.

10. (Withdrawn) The furnace carbon black producing process in accordance with claim 9 wherein off-gas is subjected to plasma heating subsequent to removal of carbon black therefrom and prior to being fed to a burner portion of the same or a different carbon black furnace.

11. (Withdrawn) The furnace carbon black producing process in accordance with claim 9 wherein an oxidant gas feed stream to a burner portion of the same or a different carbon black

furnace is subjected to plasma heating prior to being fed to the burner.

12. (Withdrawn) The furnace carbon black producing process in claim 9 wherein hydrocarbon feedstock is subjected to plasma heating prior to being fed to the furnace.

13. (Withdrawn) The furnace carbon black producing process of claim 9 wherein combustion gases produced in a burner portion of the same or a different carbon black furnace are subjected to plasma heating prior to contacting make hydrocarbon feedstock in the reactor of the carbon black furnace.

14. (Withdrawn) The furnace carbon black producing process of claim 9 wherein the oxidant gas feed stream to the burner comprises air plus oxygen enhancement, wherein the oxygen enhancement is produced by a pressure swing adsorption process.

15. (Currently amended) A furnace carbon black producing process comprising the steps of:

(a) obtaining off-gas from a carbon black furnace,

(b) dewatering and heating the off-gas and substantially removing any existing carbon black therefrom to obtain dewatered and heated off-gas, and then

(c) feeding a combustion gas feed stream comprising the dewatered and heated off-gas and feeding an oxidant gas stream comprising an oxidant gas to a burner portion of the carbon black furnace wherein the oxidant gas stream provides oxygen in an amount of less than 80% of the amount required to completely combust components of the off-gas and supplemental gases,

wherein the carbon black furnace comprises said burner portion wherein said combustion gas feed stream is combusted in the presence of said oxidant gas feed stream to produce hot combustion gases and a reactor portion wherein carbon black is produced by an interaction of the hot combustion gases with a hydrocarbon feedstock introduced to the reactor portion downstream of where said dewatered and heated off-gas is introduced in the carbon black furnace,

(d) controlling the combustion gas feed stream and oxidant gas feed stream with control means comprising sensor means so that the combusting of the combustion gas feed in the burner portion to produce hot combustion gases takes place in a fuel-rich condition so that the combustion gas feed stream does not completely combust in the burner portion of the carbon black furnace, and

(e) producing carbon black in the reactor portion of the carbon black furnace by interaction of the hot combustion gases with a hydrocarbon feedstock under said fuel rich conditions.

16. (Previously presented) The process of claim 15, wherein steps (a) through (e) are repeated and wherein step (e) of producing carbon black provides the off-gas for the succeeding step (a).

17. (Previously presented) The process of claim 15, wherein in carrying out step (e), a hydrocarbon feedstock is supplied to the reactor portion by feeding the hydrocarbon feedstock to a passage between the burner portion and the reactor portion of the carbon black furnace.

18. (Currently amended) A furnace carbon black producing process comprising the steps of:

(a) obtaining off-gas from a carbon black furnace,

(b) dewatering and heating the off-gas and substantially removing any existing carbon black therefrom to obtain dewatered and heated off-gas, and then

(c) feeding a combustion gas feed stream comprising the dewatered and heated off-gas and feeding an oxidant gas stream comprising an oxidant gas to a burner portion of a carbon black furnace, wherein the carbon black furnace to which the combustion gas feed stream and oxidant gas feed stream are selectively fed is a different carbon black furnace from the carbon black furnace of step (a), wherein the carbon black furnace to which the combustion gas feed stream and oxidant gas feed stream are fed comprises said burner portion wherein a combustion gas feed stream is combusted in the presence of an oxidant gas feed stream to produce hot combustion gases and a reactor portion downstream of said burner portion wherein the hot combustion gases interact with a hydrocarbon feedstock to produce carbon black,

(d) controlling the combustion gas feed stream and oxidant gas feed stream so that combustion of the combustion gas feed in the burner portion to produce hot combustion gases takes place in a fuel-rich condition so that the combustion gas feed stream does not completely combust in the burner portion, and

(e) producing carbon black in the reactor portion of the carbon black furnace by interaction of the hot combustion gases with a hydrocarbon feedstock under said fuel rich conditions.